

2118889

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## Attachment E

(request dated 28, 2000)

**APEX PLANT SOILS CLEANUP**  
**Hecla Mining Company - Apex Unit**  
**St. George, UT**

**Prepared by Penny Bassett**  
**Safety and Environmental Coordinator**  
**Hecla Mining Co. - Apex Unit**

**September 22, 1995**

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## 1.0 SUMMARY

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In preparation for the sale of the Apex Mill by Hecla Mining Company to OM Group, an extensive and thorough clean up of all contaminated soils around the mill site was arranged by Hecla. Based on the initial surface soil assessment done by the consulting firm Kleinfelder Inc., an agreement was reached between Hecla and OMG on the extent of the cleanup needed around the plant and what levels of contamination would be considered acceptable. It was agreed in the prepurchase contract that arsenic and lead must be cleaned to levels that are below 80 ppm in all suspected contaminated areas around the mill site. Arsenic and lead are both considered to be indicators of the presence of ore material mined from the Apex Mine by Hecla Mining Company. It was also agreed that areas of suspected petroleum hydrocarbon contamination be cleaned to levels below 80 ppm.

The project was coordinated and supervised by Hecla personnel as well as all sampling of the areas as they were being cleaned. Oversight of the project is being done by Geraghty & Miller out of their Phoenix Arizona office on the behalf of the buyer.

## **2.0 INTRODUCTION**

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### **2.1 General**

The Apex Plant is located approximately 16 miles west of St. George, Utah along Highway 91. The entire mill site covers an area of approximately 160 acres and is situated on the Shivwits Band Paiute Indian Reservation. The soils that were the subject of this cleanup project were located on less than 20 acres surrounding the actual plant buildings.

The areas to be cleaned were determined by the results of a preliminary soil assessment done by Kleinfelder, Inc. during May and June of 1995. Based on the analysis of the samples taken by Kleinfelder, all areas with arsenic, lead, and petroleum hydrocarbon levels higher than 80 ppm were considered to be unacceptable contamination. Those areas were then cleaned up with a minimum of twelve inches of soil removed. If after resampling in the same location the soil still showed elevated levels of arsenic, lead, or hydrocarbons, it was cleaned to whatever depth was necessary to meet the required limits.

### **2.2 Scope of Work**

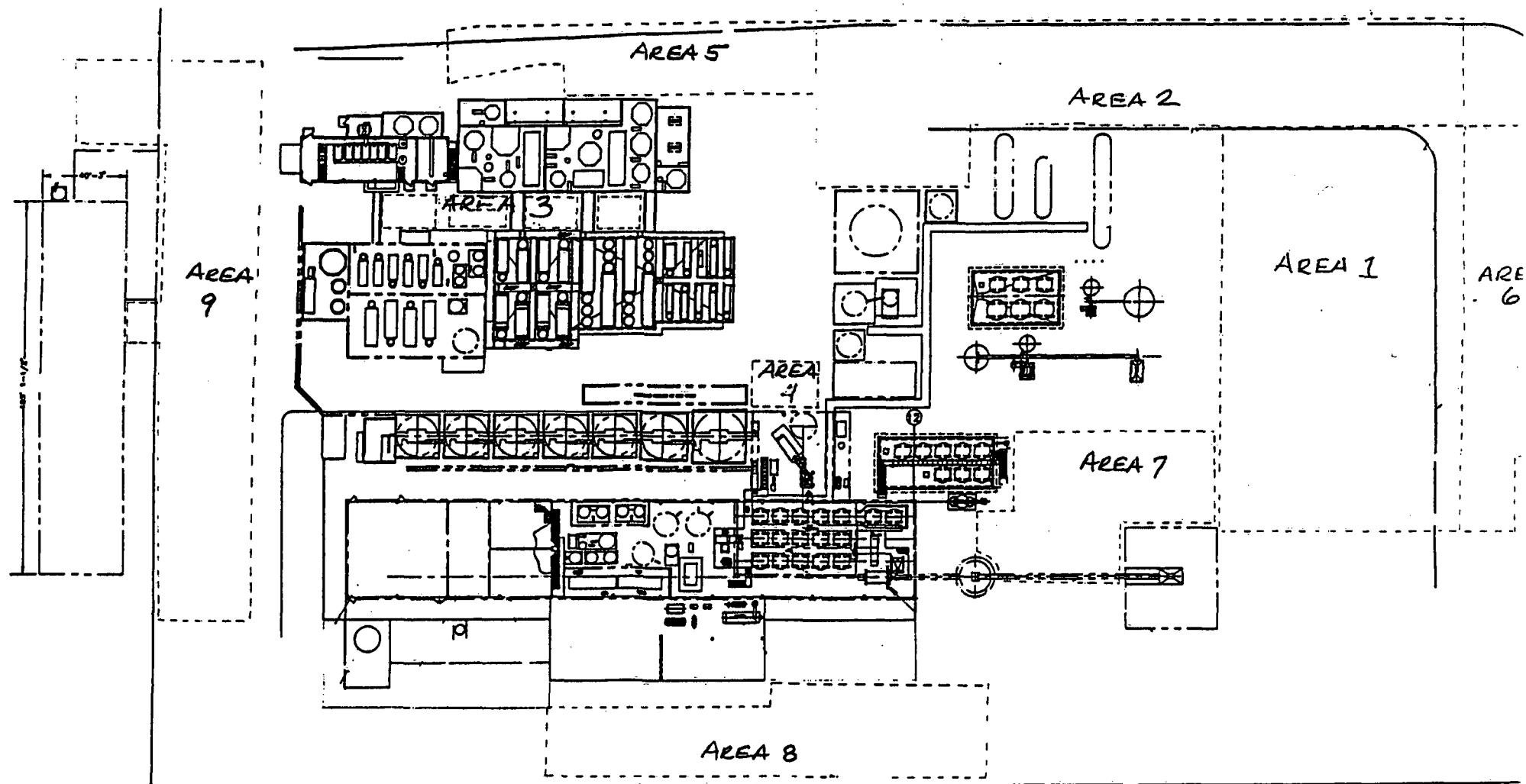
Nine areas around the plant site were cleaned to varying depths depending on contamination. A summary of the areas is as follows (Plate 1):

- ♦ Area 1 - Apex ore storage area, south of plant
- ♦ Area 2 - Driveway along southeast side of plant, near propane and acid storage
- ♦ Area 3 - Four small sections located between SX and Electrowinning building
- ♦ Area 4 - Small area in front of water treatment and old sulfur burner
- ♦ Area 5 - Driveway along east side of Electrowinning and tank farm
- ♦ Area 6 - Ore storage, south of Area 1
- ♦ Area 7 - Along east side and underneath conveyor and fine ore bin
- ♦ Area 8 - West side of plant building
- ♦ Area 9 - Driveway between plant and office building, around machine wash pad

All samples labeled AX- were analyzed for metals arsenic and lead by American West Analytical Lab. Other samples were collected for hydrocarbon analysis by Utility Testing. Two types of hydrocarbon analysis was done depending on type of contamination thought to be in the soils. In Area 5 all samples were analyzed for Total Petroleum Hydrocarbons (TPH - EPA method 8015) which detects lightweight fuels such as gasoline, diesel, and kerosene. This method was used because the solvent extraction circuit uses a kerosene based solvent. The areas around the machine wash pad and driveways were analyzed for Total Recoverable Hydrocarbons (TRH - EPA method 814.1) which detects heavy oils.

**PLATE 1**

Location of Soil Cleanup Areas  
Hecla Mining Co. - Apex Plant



### **3.0 FIELD ACTIVITIES**

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For the duration of this project, removal of the contaminated soils was done prior to the sample taking. A minimum of twelve inches was taken from all locations. If the soils were still visually contaminated it would be removed until all visual signs were gone. At that point a sample was collected and an initial analysis for arsenic, and lead run at the Apex laboratory for quick determination. Once the area was cleaned deep enough that a sample passed specifications at the Apex lab a duplicate sample was sent out to American West Analytical.

#### **3.1 Soil Removal**

Soil removal was contracted out to Southwest Stone sand and gravel contractors. Cleanup around the plant site was done in stages so that Hecla could continue operations without too much disruption. The depth of the excavated areas varied from twelve inches to seven feet depending on the level of contamination, on an average the sites were dug to a depth of approximately 1 to 2 feet.

The soil removed from the plant site was stockpiled either in Pond 2 or in a cleared area just south of the pond. The material will be saved for use in blending with other wastes that are to be moved to Pond 2a within the next 12 months. All excavated areas were backfilled with clean soil from the topsoil stockpile and topped with roadbase and gravel.

#### **3.2 Soil Sample Collection**

Each sample location was given a unique sample I.D. number. If more than one sample was taken at the same location the subsequent samples were given the same number followed by another number ( /1 or /2, etc.). The samples for metals analysis had the prefix AX- (Plate 2), and those for hydrocarbon analysis had the prefix H- (Plate 3).

Samples for metals analysis were collected by digging in the soil at the bottom of the excavated area with a pick or chisel. The loosened dirt was scooped into a plastic bag and mailed to the laboratory. No preservatives were used and the samples were not refrigerated as per the directions of the laboratory. Digging materials were cleaned with deionized water after each sample.

Areas of suspected hydrocarbon contamination were sampled in the same manner but samples were placed in an approved glass container with a teflon lid. Samples were refrigerated and mailed overnight express to preserve the hydrocarbons.

### **3.3 Sample Handling**

Upon collection, each sample was labeled with the date and sample ID number. A chain of custody was filled out for each group of samples sent out to the outside laboratories. The information contained on the Chain of Custody includes: Hecla's name, address, and telephone number, the date the samples were collected, and the analyses for which the samples were being submitted. The chain of custody form was signed by each person who handled the samples.



## **4.0 RESULTS**

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### **3.1 Metals Arsenic and Lead**

A total of 45 locations were sampled around the plant during cleanup, several of these locations required more than one sample. All of the cleaned sites had a final analysis that was below 80 ppm in both arsenic and lead. (Table 1)

Area 1 had the deepest contamination of metals due to the fact that it had been the location of the ore stockpile while the mill was processing the mine ore. The entire area had to be cleaned to an approximate depth of three feet. Areas 2 and 3 were both cleaned to a depth of 12 inches where no metals were detected. Area 4 was excavated to a depth of 4 feet though soils were not contaminated to that depth, the extra depth was necessary to help drainage in the area.

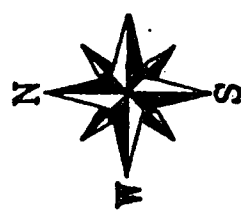
Approximately one half of Area 5 was cleaned to a depth of 1.5 to 2 feet, the remaining portion was excavated to a total depth of 6 to 7 feet because of suspected hydrocarbon contamination. The metals were not detected at those depths.

Areas 6, 7, 8, and 9 were all cleaned to a depth of approximately 1 to 2 feet with a few localized areas need further soil removal. Metals contamination did not go deeper than 2 feet in all these areas.

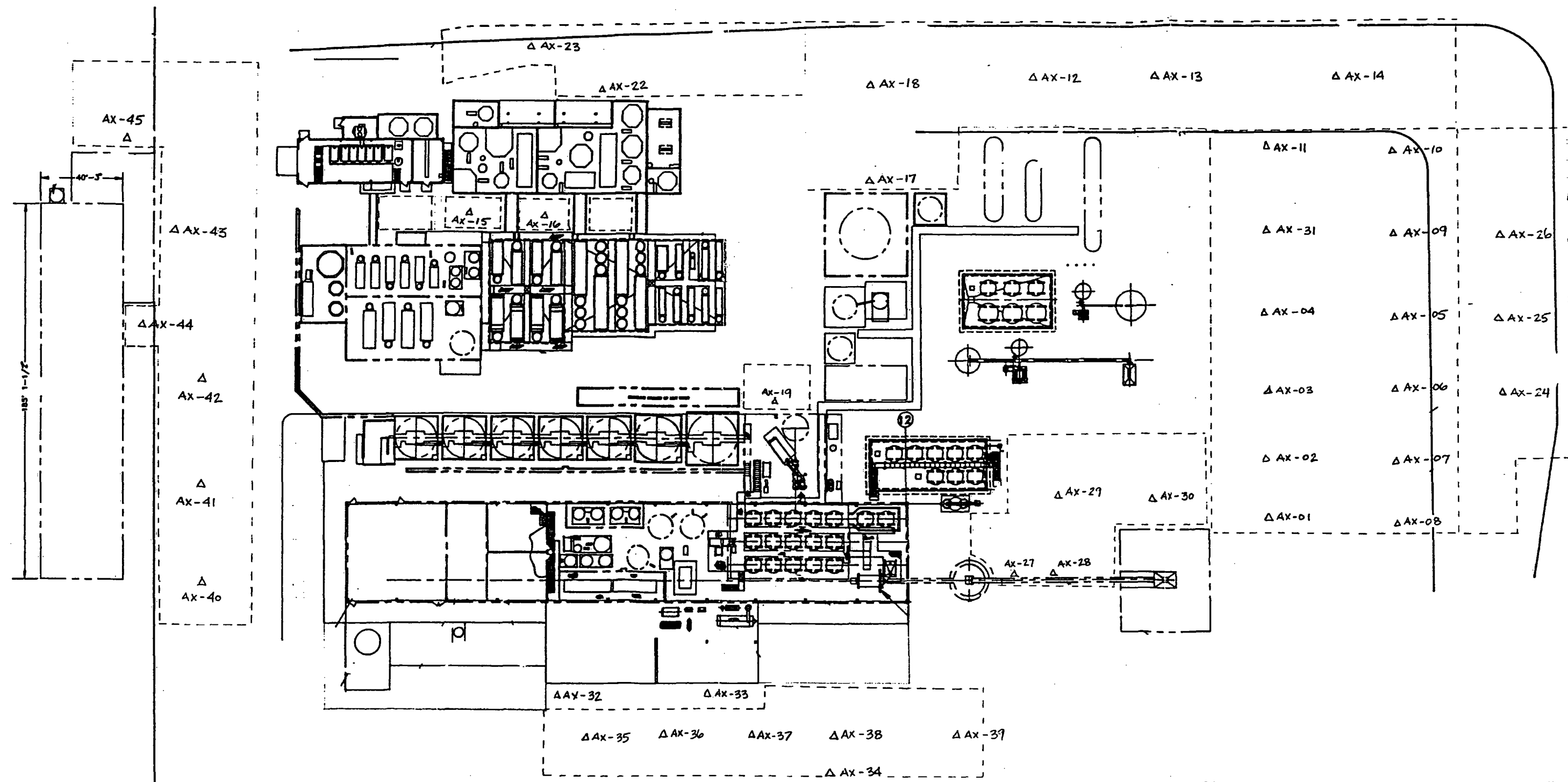
### **3.2 Hydrocarbons**

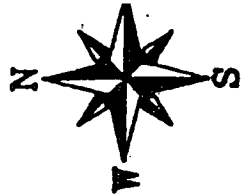
Three areas were tested for hydrocarbons, Areas 3, 5, and 9, with a total of twenty samples analyzed (Table 2). In Area 5 we encountered what was thought to be a kerosene type hydrocarbon contamination which was initially identified by the characteristic odor. The soil was excavated in an area measuring approximately 20 feet by 60 feet to a depth of 6 to 7 feet until the odor was no longer detected in the soils. The pit was sampled on all sides and the floor, test results indicated that lightweight hydrocarbons were not present (using EPA method 8015 for Total Petroleum Hydrocarbons). Testing was also done on the soil between the Solvent Extraction circuit and the Tank Farm / Electrowinning (Area 3). There were no lightweight hydrocarbons detected.

Three samples were taken in Area 9 that were tested for heavy oils (EPA method 814.1 for Total Recoverable Hydrocarbons). This detection method was used on these samples because of the visible oil stains that could be seen on the surface prior to cleanup. The area is used for mobile equipment maintenance and has a fair amount of vehicle traffic on it. Sample H-19 is a repeat of sample H-15 after soils were recleaned to a depth of 2.5 feet. No oils were detected at this depth in any of the samples.



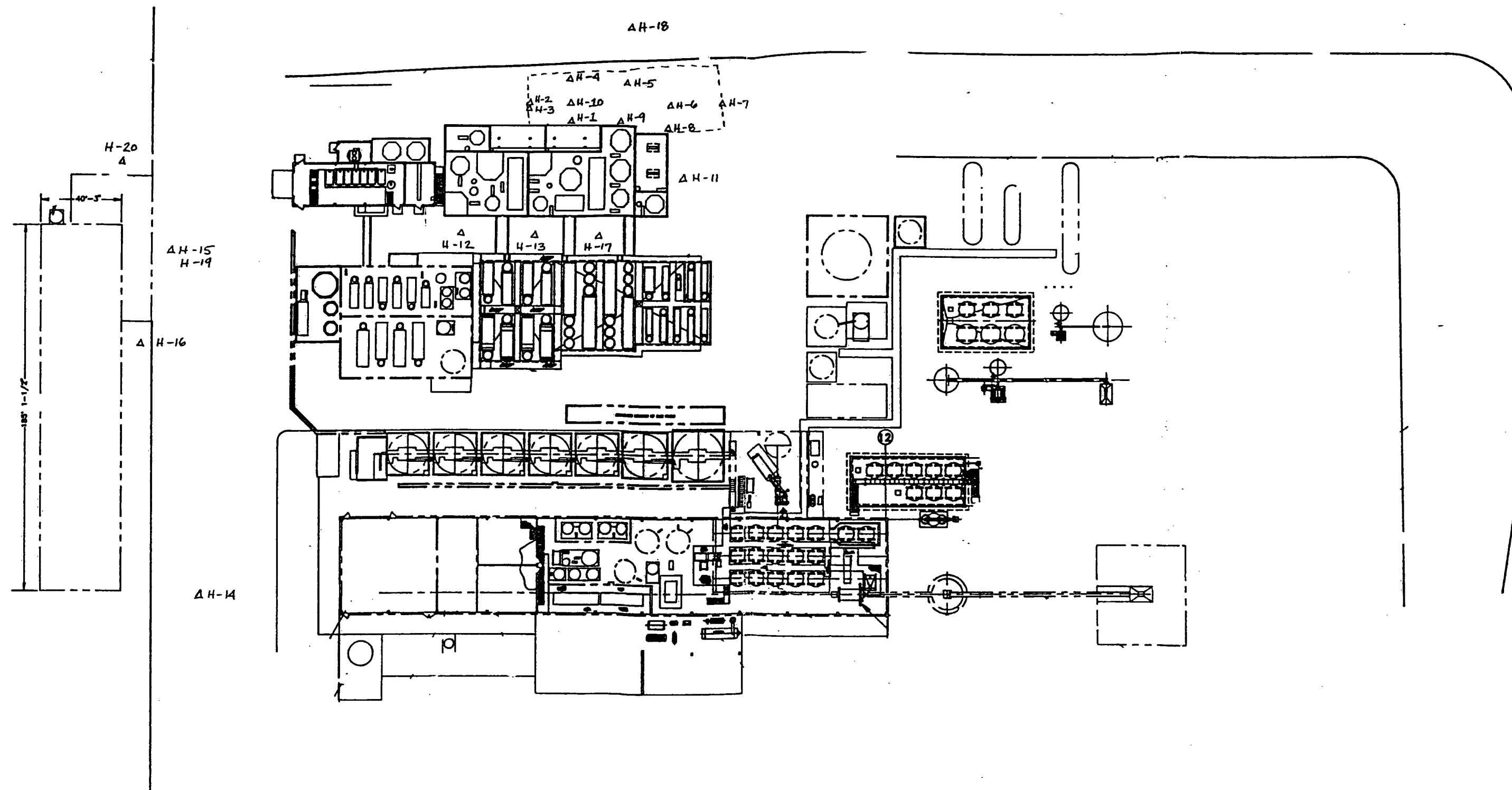
**PLATE 2**  
Sample Locations for Metals Analysis (AX-)  
Hecla Mining Co. - Apex Plant





# PLATE 3

Sample Locations for Hydrocarbon Analysis (H-)  
Hecla Mining Co. - Apex Plant



**Table 1**  
**Summary of Metals Analysis**  
**Apex Plant Soils Cleanup**

Sample ID	Location	Depth to Sample	American West Analytical	
			As ppm	Pb ppm
AX-01	Area 1	1.5'	28	83
* AX-01/1	Area 1	4'	2.3	4.9
AX-02	Area 1	1.5'	170	500
* AX-02/1	Area 1	3'	24	62
AX-03	Area 1	1.5'	860	2200
* AX-03/2	Area 1	3'	5.3	17
AX-04	Area 1	1.5'	150	380
* AX-04/1	Area 1	3.5'	5.1	21
* AX-05	Area 1	1'	15	38
* AX-06	Area 1	1'	9.9	37
AX-07	Area 1	1.5'	220	490
* AX-07/2	Area 1	4'	24	69
AX-08	Area 1	1.5'	85	310
AX-08/2	Area 1	3'	81	200
* AX-08/3	Area 1	4'	1.7	8.9
AX-09	Area 1	2'	34	140
* AX-09/1	Area 1	4'	4.4	11
AX-10	Area 1	2'	430	1800
* AX-10/1	Area 1	3'	3.4	16
AX-11	Area 1	2'	160	560
* AX-11/2	Area 1	3.5'	4.7	28
* AX-12	Area 2	1'	2.6	7.6
* AX-13	Area 2	1'	4.2	14
* AX-14	Area 2	1'	15	51
* AX-15	Area 3	1'	26	63
* AX-16	Area 3	1'	2.4	9.2
* AX-17	Area 2	1'	3.9	13
* AX-18	Area 2	1'	20	42
AX-19	Area 4	1'	75	100
* AX-19/1	Area 4	4'	4.1	16
* AX-20	Pond 2a	surface	3.9	10
* AX-21	Pond 2a	surface	7.2	34
AX-22	Area 5	1'	170	340
* AX-22/1	Area 5	7'	1.1	<3.0
AX-23	Area 5	1'	100	290
* AX-23/1	Area 5	2.5'	18	52
* AX-24	Area 6	1'	8.3	21
* AX-25	Area 6	1'	3.8	11

**Table 1**  
**Summary of Metals Analysis**  
**Apex Plant Soils Cleanup**

Sample ID	Location	Depth to Sample	American West Analytical	
			As ppm	Pb ppm
* AX-26	Area 6	1'	14	53
* AX-27	Area 7	1'	1.9	9.9
* AX-28	Area 7	1'	2.1	9.6
* AX-29	Area 7	1'	7.7	24
AX-30	Area 7	1'	33	88
* AX-30/1	Area 7	2'	9	34
* AX-31	Area 1	3'	2.2	14
* AX-35	Area 8	1'	17	25
* AX-36	Area 8	1'	22	17
* AX-37	Area 8	1'	3.9	9
AX-38/1	Area 8	2'	40	100
* AX-38/2	Area 8	3'	3.6	7.7
* AX-39	Area 8	1'	49	78
* AX-40	Area 9	1.5'	4.1	12
* AX-41	Area 9	1.5'	6.8	16
* AX-42	Area 9	0.5'	33	38
AX-43	Area 9	1.5'	10	20
* AX-43/1	Area 9	2.5'	5.6	8.4
* AX-44	Area 9	1'	7.4	11
* AX-45	Area 9	2.5'	2.7	9.1

\* Indicates final sample taken after all cleanup done

**Table 2**  
**Summary of Hydrocarbon Analysis**  
**Apex Plant Soils Cleanup**

Sample ID	Location	Depth to Sample	TPH (method 8015)			TRH (method 814.1)
			Gasoline	Diesel	TPH	
H-1	Area 5	3'	<10	<10	<10	
H-2	Area 5	3'	<10	<10	<10	
H-3	Area 5	6'	<10	<10	<10	
H-4	Area 5	3'	<10	<10	<10	
H-5	Area 5	3'	<10	<10	<10	
H-6	Area 5	7'	<10	<10	<10	
H-7	Area 5	6'	<10	<10	<10	
H-8	Area 5	3'	<10	<10	<10	
H-9	Area 5	3'	<10	<10	<10	
H-10	Area 5	7'	<10	<10	<10	
H-11	Area 5	2'	<10	<10	<10	
H-12	Area 3	2'	<10	<10	<10	
H-13	Area 3	2'	<10	<10	<10	
H-14	Area 9	1.5'				<10
H-15	Area 9	1.5'				166
H-16	Area 9	1.5'				22.9
H-17	Area 3	2'	<10	<10	<10	
H-18	Area 5	2'	<10	<10	<10	
H-19	Area 9	2.5'				<10
H-20	Area 9	2.5'				<10

NOTE: Sample H-19 is a repeat of sample H-15 after more cleanup was done

## **APPENDIX A**

### **Metals Analysis**

**American West Analytical**



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Client: Hecla Mining Company  
Date Sampled: July 13, 1995  
Lab Sample ID.: 23165-01  
Field Sample ID: Apex/ AX-01

Contact: Penny Bassett  
Date Received: July 17, 1995  
Received By: Erica Fulcher  
Set Description: Fourteen Soil Samples

## INORGANIC ANALYSIS REPORT

### Analytical Results

	TOTAL METALS	Method <u>Used:</u>	Detection <u>Limit:</u> mg/kg	Amount <u>Detected:</u> mg/kg
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	28.
	Lead	6010	3.0	83.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Co.  
Date Sampled: September 25, 1995  
Lab Sample ID.: 23845-01  
Field Sample ID: APEX/AX-01/1

Contact: Penny Bassett  
Date Received: September 26, 1995  
Received By: Elona Hayward  
Set Description: Two Solid Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS			
Arsenic	7060	0.5	2.3
Lead	6010	3.0	4.9

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: July 13, 1995  
Lab Sample ID.: 23165-02  
Field Sample ID: Apex/ AX-02

Contact: Penny Bassett  
Date Received: July 17, 1995  
Received By: Erica Fulcher  
Set Description: Fourteen Soil Samples

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	170.
	Lead	6010	3.0	500.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: July 21, 1995  
Lab Sample ID.: 23276-01  
Field Sample ID: Apex/AX-02/1

Contact: Penny Bassett  
Date Received: July 27, 1995  
Received By: Laurie Hastings  
Set Description: Ten Soil Samples

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	24.
	Lead	6010	3.0	62.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: July 13, 1995  
Lab Sample ID.: 23165-03  
Field Sample ID: Apex/ AX-03

Contact: Penny Bassett  
Date Received: July 17, 1995  
Received By: Erica Fulcher  
Set Description: Fourteen Soil Samples

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	860.
	Lead	6010	3.0	2,200.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: July 21, 1995  
Lab Sample ID.: 23276-02  
Field Sample ID: Apex/AX-03/2

Contact: Penny Bassett  
Date Received: July 27, 1995  
Received By: Laurie Hastings  
Set Description: Ten Soil Samples

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	5.3
	Lead	6010	3.0	17.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: July 13, 1995  
Lab Sample ID.: 23165-04  
Field Sample ID: Apex/ AX-04

Contact: Penny Bassett  
Date Received: July 17, 1995  
Received By: Erica Fulcher  
Set Description: Fourteen Soil Samples

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	150.
	Lead	6010	3.0	380.

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Salt Lake City, Utah  
84115

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: August 23, 1995  
Lab Sample ID.: 23572-01  
Field Sample ID: Apex/AX-04/1

Contact: Penny Bassett  
Date Received: August 28, 1995  
Received By: Elona Hayward  
Set Description: Five Soil Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
TOTAL METALS			
Arsenic	7060	0.5	5.1
Lead	6010	3.0	21.

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Client: Hecla Mining Company  
Date Sampled: July 13, 1995  
Lab Sample ID.: 23165-05  
Field Sample ID: Apex/ AX-05

Contact: Penny Bassett  
Date Received: July 17, 1995  
Received By: Erica Fulcher  
Set Description: Fourteen Soil Samples

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	15.
	Lead	6010	3.0	38.

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## INORGANIC ANALYSIS REPORT

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Client: Hecla Mining Company  
Date Sampled: July 13, 1995  
Lab Sample ID.: 23165-06  
Field Sample ID: Apex/ AX-06

Contact: Penny Bassett  
Date Received: July 17, 1995  
Received By: Erica Fulcher  
Set Description: Fourteen Soil Samples

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	9.9
	Lead	6010	3.0	37.

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## INORGANIC ANALYSIS REPORT

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Client: Hecla Mining Company  
Date Sampled: July 13, 1995  
Lab Sample ID.: 23165-07  
Field Sample ID: Apex/ AX-07

Contact: Penny Bassett  
Date Received: July 17, 1995  
Received By: Erica Fulcher  
Set Description: Fourteen Soil Samples

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	220.
	Lead	6010	3.0	490.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: July 21, 1995  
Lab Sample ID.: 23276-03  
Field Sample ID: Apex/AX-07/2

Contact: Penny Bassett  
Date Received: July 27, 1995  
Received By: Laurie Hastings  
Set Description: Ten Soil Samples

### Analytical Results

463 West 3600 South  
Salt Lake City, Utah  
84115

	<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS			
Arsenic	7060	0.5	24.
Lead	6010	3.0	69.

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Client: Hecla Mining Company  
Date Sampled: July 13, 1995  
Lab Sample ID.: 23165-08  
Field Sample ID: Apex/ AX-08

Contact: Penny Bassett  
Date Received: July 17, 1995  
Received By: Erica Fulcher  
Set Description: Fourteen Soil Samples

## INORGANIC ANALYSIS REPORT

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	85.
	Lead	6010	3.0	310.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: July 21, 1995  
Lab Sample ID.: 23276-04  
Field Sample ID: Apex/AX-08/2

Contact: Penny Bassett  
Date Received: July 27, 1995  
Received By: Laurie Hastings  
Set Description: Ten Soil Samples

### Analytical Results

463 West 3600 South  
Salt Lake City, Utah  
84115

	<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
<b>TOTAL METALS</b>			
Arsenic	7060	0.5	81.
Lead	6010	3.0	200.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Co.  
 Date Sampled: September 18, 1995  
 Lab Sample ID.: 23782-03  
 Field Sample ID: APEX/AX-08/3

Contact: Penny Bassett  
 Date Received: September 20, 1995  
 Received By: Elona Hayward  
 Set Description: Four Solid Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS			
Arsenic	7060	0.5	1.7
Lead	6010	3.0	8.9

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Client: Hecla Mining Company  
Date Sampled: July 13, 1995  
Lab Sample ID.: 23165-09  
Field Sample ID: Apex/ AX-09

Contact: Penny Bassett  
Date Received: July 17, 1995  
Received By: Erica Fulcher  
Set Description: Fourteen Soil Samples

## INORGANIC ANALYSIS REPORT

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	34.
	Lead	6010	3.0	140.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Co.  
Date Sampled: September 25, 1995  
Lab Sample ID.: 23845-02  
Field Sample ID: APEX/AX-09/1

Contact: Penny Bassett  
Date Received: September 26, 1995  
Received By: Elona Hayward  
Set Description: Two Solid Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
TOTAL METALS			
Arsenic	7060	0.5	4.4
Lead	6010	3.0	11.

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Client: Hecla Mining Company  
Date Sampled: July 13, 1995  
Lab Sample ID.: 23165-10  
Field Sample ID: Apex/AX-10

Contact: Penny Bassett  
Date Received: July 17, 1995  
Received By: Erica Fulcher  
Set Description: Fourteen Soil Samples

## INORGANIC ANALYSIS REPORT

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	430.
	Lead	6010	3.0	1,800.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: July 19, 1995  
Lab Sample ID.: 23276-05  
Field Sample ID: Apex/AX-10/1

Contact: Penny Bassett  
Date Received: July 27, 1995  
Received By: Laurie Hastings  
Set Description: Ten Soil Samples

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	3.4
	Lead	6010	3.0	16.

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## INORGANIC ANALYSIS REPORT

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Client: Hecla Mining Company  
Date Sampled: July 13, 1995  
Lab Sample ID.: 23165-11  
Field Sample ID: Apex/ AX-11

Contact: Penny Bassett  
Date Received: July 17, 1995  
Received By: Erica Fulcher  
Set Description: Fourteen Soil Samples

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	160.
	Lead	6010	3.0	560.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: August 24, 1995  
Lab Sample ID.: 23572-02  
Field Sample ID: Apex/AX-11/2

Contact: Penny Bassett  
Date Received: August 28, 1995  
Received By: Elona Hayward  
Set Description: Five Soil Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
TOTAL METALS			
Arsenic	7060	0.5	4.7
Lead	6010	3.0	28.

3 West 3600 South  
alt Lake City, Utah  
84115

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Client: Hecla Mining Company  
Date Sampled: July 14, 1995  
Lab Sample ID.: 23165-12  
Field Sample ID: Apex/AX-12

Contact: Penny Bassett  
Date Received: July 17, 1995  
Received By: Erica Fulcher  
Set Description: Fourteen Soil Samples

## INORGANIC ANALYSIS REPORT

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	2.6
	Lead	6010	3.0	7.6

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Client: Hecla Mining Company  
Date Sampled: July 14, 1995  
Lab Sample ID.: 23165-13  
Field Sample ID: Apex/ AX-13

Contact: Penny Bassett  
Date Received: July 17, 1995  
Received By: Erica Fulcher  
Set Description: Fourteen Soil Samples

## INORGANIC ANALYSIS REPORT

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	4.2
	Lead	6010	3.0	14.

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Client: Hecla Mining Company  
Date Sampled: July 14, 1995  
Lab Sample ID.: 23165-14  
Field Sample ID: Apex/ AX-14

Contact: Penny Bassett  
Date Received: July 17, 1995  
Received By: Erica Fulcher  
Set Description: Fourteen Soil Samples

## INORGANIC ANALYSIS REPORT

### Analytical Results

TOTAL METALS	Method Used:	Detection Limit: mg/kg	Amount Detected: mg/kg
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5
	Lead	6010	3.0

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: July 19, 1995  
Lab Sample ID.: 23276-06  
Field Sample ID: Apex/AX-15

Contact: Penny Bassett  
Date Received: July 27, 1995  
Received By: Laurie Hastings  
Set Description: Ten Soil Samples

### Analytical Results

		Method Used:	Detection Limit: mg/kg	Amount Detected: mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	26.
	Lead	6010	3.0	63.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: July 19, 1995  
Lab Sample ID.: 23276-07  
Field Sample ID: Apex/AX-16

Contact: Penny Bassett  
Date Received: July 27, 1995  
Received By: Laurie Hastings  
Set Description: Ten Soil Samples

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	2.4
	Lead	6010	3.0	9.2

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: July 20, 1995  
Lab Sample ID.: 23276-08  
Field Sample ID: Apex/AX-17

Contact: Penny Bassett  
Date Received: July 27, 1995  
Received By: Laurie Hastings  
Set Description: Ten Soil Samples

### Analytical Results

463 West 3600 South  
Salt Lake City, Utah  
84115

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
TOTAL METALS			
Arsenic	7060	0.5	3.9
Lead	6010	3.0	13.

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Client: Hecla Mining Company  
Date Sampled: July 20, 1995  
Lab Sample ID.: 23276-09  
Field Sample ID: Apex/AX-18

Contact: Penny Bassett  
Date Received: July 27, 1995  
Received By: Laurie Hastings  
Set Description: Ten Soil Samples

## INORGANIC ANALYSIS REPORT

### Analytical Results

		<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS				
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5	20.
	Lead	6010	3.0	42.

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Client: Hecla Mining Company  
Date Sampled: July 20, 1995  
Lab Sample ID.: 23276-10  
Field Sample ID: Apex/AX-19

Contact: Penny Bassett  
Date Received: July 27, 1995  
Received By: Laurie Hastings  
Set Description: Ten Soil Samples

## INORGANIC ANALYSIS REPORT

### Analytical Results

463 West 3600 South  
Salt Lake City, Utah  
84115

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
TOTAL METALS			
Arsenic	7060	0.5	75.
Lead	6010	3.0	100.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: August 21, 1995  
Lab Sample ID.: 23572-03  
Field Sample ID: Apex/AX-19/1

Contact: Penny Bassett  
Date Received: August 28, 1995  
Received By: Elona Hayward  
Set Description: Five Soil Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
<b>TOTAL METALS</b>			
Arsenic	7060	0.5	4.1
Lead	6010	3.0	16.

53 West 3600 South  
Salt Lake City, Utah  
84115

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: July 27, 1995  
Lab Sample ID.: 23516-01  
Field Sample ID.: APEX/AX-20

Contact: Penny Bassett  
Date Received: August 22, 1995  
Received By: Elona Hayward  
Set Description: Eleven Soil Samples

### Analytical Results

TOTAL METALS	Method	Detection	Amount
	Used:	Limit:	Detected:
		mg/kg	mg/kg
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5
	Lead	6010	3.0
			10.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: July 27, 1995  
Lab Sample ID.: 23516-02  
Field Sample ID.: APEX/AX-21

Contact: Penny Bassett  
Date Received: August 22, 1995  
Received By: Elona Hayward  
Set Description: Eleven Soil Samples

### Analytical Results

TOTAL METALS	Method Used:	Detection Limit: mg/kg	Amount Detected: mg/kg
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5
	Lead	6010	3.0

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: August 8, 1995  
Lab Sample ID.: 23516-03  
Field Sample ID.: APEX/AX-22

Contact: Penny Bassett  
Date Received: August 22, 1995  
Received By: Elona Hayward  
Set Description: Eleven Soil Samples

### Analytical Results

463 West 3600 South  
Salt Lake City, Utah  
84115

	<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS			
Arsenic	7060	0.5	170.
Lead	6010	3.0	340.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: August 8, 1995  
Lab Sample ID.: 23516-04  
Field Sample ID.: APEX/AX-23

Contact: Penny Bassett  
Date Received: August 22, 1995  
Received By: Elona Hayward  
Set Description: Eleven Soil Samples

### Analytical Results

463 West 3600 South  
Salt Lake City, Utah  
84115

	<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS			
Arsenic	7060	0.5	100.
Lead	6010	3.0	290.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: August 9, 1995  
Lab Sample ID.: 23516-05  
Field Sample ID.: APEX/AX-24

Contact: Penny Bassett  
Date Received: August 22, 1995  
Received By: Elona Hayward  
Set Description: Eleven Soil Samples

### Analytical Results

TOTAL METALS	Method	Detection	Amount
	<u>Used:</u>	<u>Limit:</u> mg/kg	<u>Detected:</u> mg/kg
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5
	Lead	6010	3.0

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: August 9, 1995  
Lab Sample ID.: 23516-06  
Field Sample ID.: APEX/AX-25

Contact: Penny Bassett  
Date Received: August 22, 1995  
Received By: Elona Hayward  
Set Description: Eleven Soil Samples

### Analytical Results

463 West 3600 South  
Salt Lake City, Utah  
84115

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
TOTAL METALS			
Arsenic	7060	0.5	3.8
Lead	6010	3.0	11.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: August 9, 1995  
Lab Sample ID.: 23516-07  
Field Sample ID.: APEX/AX-26

Contact: Penny Bassett  
Date Received: August 22, 1995  
Received By: Elona Hayward  
Set Description: Eleven Soil Samples

### Analytical Results

463 West 3600 South  
Salt Lake City, Utah  
84115

	<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS			
Arsenic	7060	0.5	14.
Lead	6010	3.0	53.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: August 18, 1995  
Lab Sample ID.: 23516-08  
Field Sample ID.: APEX/AX-27

Contact: Penny Bassett  
Date Received: August 22, 1995  
Received By: Elona Hayward  
Set Description: Eleven Soil Samples

### Analytical Results

463 West 3600 South  
Salt Lake City, Utah  
84115

	<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS			
Arsenic	7060	0.5	1.9
Lead	6010	3.0	9.9

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Released by: \_\_\_\_\_

*PLT*

Laboratory Supervisor

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: August 18, 1995  
Lab Sample ID.: 23516-09  
Field Sample ID.: APEX/AX-28

Contact: Penny Bassett  
Date Received: August 22, 1995  
Received By: Elona Hayward  
Set Description: Eleven Soil Samples

### Analytical Results

463 West 3600 South  
Salt Lake City, Utah  
84115

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
TOTAL METALS			
Arsenic	7060	0.5	2.1
Lead	6010	3.0	9.6

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Laboratory Supervisor

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Client: Hecla Mining Company  
Date Sampled: August 18, 1995  
Lab Sample ID.: 23516-10  
Field Sample ID.: APEX/AX-29

Contact: Penny Bassett  
Date Received: August 22, 1995  
Received By: Elona Hayward  
Set Description: Eleven Soil Samples

## INORGANIC ANALYSIS REPORT

### Analytical Results

463 West 3600 South  
Salt Lake City, Utah  
84115

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
TOTAL METALS			
Arsenic	7060	0.5	7.7
Lead	6010	3.0	24.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: August 18, 1995  
Lab Sample ID.: 23516-11  
Field Sample ID.: APEX/AX-30

Contact: Penny Bassett  
Date Received: August 22, 1995  
Received By: Elona Hayward  
Set Description: Eleven Soil Samples

### Analytical Results

TOTAL METALS	Method	Detection	Amount
	<u>Used:</u>	<u>Limit:</u> mg/kg	<u>Detected:</u> mg/kg
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.5
	Lead	6010	3.0
			33.
			88.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: August 23, 1995  
Lab Sample ID.: 23572-04  
Field Sample ID: Apex/AX-30/1

Contact: Penny Bassett  
Date Received: August 28, 1995  
Received By: Elona Hayward  
Set Description: Five Soil Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
<b>TOTAL METALS</b>			
Arsenic	7060	0.5	9.0
Lead	6010	3.0	34.

West 3600 South  
Lake City, Utah  
84115

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Company  
Date Sampled: August 23, 1995  
Lab Sample ID.: 23572-05  
Field Sample ID: Apex/AX-31

Contact: Penny Bassett  
Date Received: August 28, 1995  
Received By: Elona Hayward  
Set Description: Five Soil Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS			
Arsenic	7060	0.5	2.2
Lead	6010	3.0	14.

3 West 3600 South  
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Fax (801) 263-8687

## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Co.  
Date Sampled: September 11, 1995  
Lab Sample ID.: 23727  
Set Description: Seven Solid Samples

Contact: Penny Bassett  
Date Received: September 14, 1995  
Received By: Elona Hayward

Analysis Requested:

Total Arsenic

Method Ref. Number:

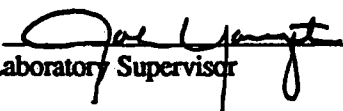
7060

### Analytical Results

Units = mg/kg

<u>Field Sample ID</u>	<u>Lab Sample ID</u>	<u>Detection Limit:</u>	<u>Amount Detected:</u>
APEX/AX-35	23727-01	0.5	17.
APEX/AX-36	23727-02	0.5	22.
APEX/AX-37	23727-03	0.5	3.9
APEX/AX-38/1	23727-04	0.5	40.
APEX/AX-39	23727-05	0.5	49.
APEX/AX-22/1	23727-06	0.5	1.1
APEX/AX-23/1	23727-07	0.5	18.

Released by:

  
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Report Date 9/15/95

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**INORGANIC ANALYSIS REPORT**

Client: Hecla Mining Co.  
Date Sampled: September 18, 1995  
Lab Sample ID.: 23782-04  
Field Sample ID: APEX/AX-38/2

Contact: Penny Bassett  
Date Received: September 20, 1995  
Received By: Elona Hayward  
Set Description: Four Solid Samples

**Analytical Results**

	<b><u>Method Used:</u></b>	<b><u>Detection Limit:</u></b> mg/kg	<b><u>Amount Detected:</u></b> mg/kg
<b>TOTAL METALS</b>			
Arsenic	7060	0.5	3.6
Lead	6010	3.0	7.7

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Co.  
Date Sampled: September 13, 1995  
Lab Sample ID.: 23765-01  
Field Sample ID: APEX/AX-40

Contact: Penny Bassett  
Date Received: September 19, 1995  
Received By: Elona Hayward  
Set Description: Five Solid Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
<b>TOTAL METALS</b>			
Arsenic	7060	0.5	4.1
Lead	6010	3.0	12.

West 3600 South  
It Lake City, Utah  
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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Co.  
Date Sampled: September 13, 1995  
Lab Sample ID.: 23765-02  
Field Sample ID: APEX/AX-41

Contact: Penny Bassett  
Date Received: September 19, 1995  
Received By: Elona Hayward  
Set Description: Five Solid Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
TOTAL METALS			
Arsenic	7060	0.5	6.8
Lead	6010	3.0	16.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Co.  
Date Sampled: September 13, 1995  
Lab Sample ID.: 23765-03  
Field Sample ID: APEX/AX-42

Contact: Penny Bassett  
Date Received: September 19, 1995  
Received By: Elona Hayward  
Set Description: Five Solid Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
<b>TOTAL METALS</b>			
Arsenic	7060	0.5	33.
Lead	6010	3.0	38.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Co.  
Date Sampled: September 13, 1995  
Lab Sample ID.: 23765-04  
Field Sample ID: APEX/AX-43

Contact: Penny Bassett  
Date Received: September 19, 1995  
Received By: Elona Hayward  
Set Description: Five Solid Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
<b>TOTAL METALS</b>			
Arsenic	7060	0.5	10.
Lead	6010	3.0	20.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Co.  
Date Sampled: September 19, 1995  
Lab Sample ID.: 23782-01  
Field Sample ID: APEX/AX-43/1

Contact: Penny Bassett  
Date Received: September 20, 1995  
Received By: Elona Hayward  
Set Description: Four Solid Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
TOTAL METALS			
Arsenic	7060	0.5	5.6
Lead	6010	3.0	8.4

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Co.  
Date Sampled: September 13, 1995  
Lab Sample ID.: 23765-05  
Field Sample ID: APEX/AX-44

Contact: Penny Bassett  
Date Received: September 19, 1995  
Received By: Elona Hayward  
Set Description: Five Solid Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit: mg/kg</u>	<u>Amount Detected: mg/kg</u>
<b>TOTAL METALS</b>			
Arsenic	7060	0.5	7.4
Lead	6010	3.0	11.

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## INORGANIC ANALYSIS REPORT

Client: Hecla Mining Co.  
 Date Sampled: September 19, 1995  
 Lab Sample ID.: 23782-02  
 Field Sample ID: APEX/AX-45

Contact: Penny Bassett  
 Date Received: September 20, 1995  
 Received By: Elona Hayward  
 Set Description: Four Solid Samples

### Analytical Results

	<u>Method Used:</u>	<u>Detection Limit:</u> mg/kg	<u>Amount Detected:</u> mg/kg
TOTAL METALS			
Arsenic	7060	0.5	2.7
Lead	6010	3.0	9.1

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 Laboratory Supervisor

## **APPENDIX B**

### **Hydrocarbon Analysis**

#### **Utility Testing**

# UTILITY TESTING LABORATORY

875 SO. CHESTNUT ST.  
P. O. BOX 25005  
SALT LAKE CITY, UTAH 84125  
PHONE: (801) 973-8305  
FAX: (801) 973-8333

RECEIVED SEP 13 1995

September 14, 1995

Hecla Mining Co-Apex  
P.O. Box 2407  
St. George, UT 84770

Attention: Ms. Penny Bassett

Subject: TPH Testing - Proj. - Apex

Sample Collected: 12 Sept 1995

Sample Received: 13 Sept 1995

**TOTAL PETROLEUM HYDROCARBONS (TPH) - GASOLINE & DIESEL  
(MODIFIED CALIFORNIA METHOD 8015)  
METHOD DETECTION LIMITS: 10 ppm SOIL, .5 ppm WATER**

<u>Test No.</u>	<u>SOIL SAMPLE</u>	<u>Test Results mg/Kg, mg/L (ppm)</u>
09-13-95-01	H-1	< 10 mg/Kg Gasoline < 10 mg/Kg Diesel < 10 mg/Kg TPH

Date Analyzed:  
13 SEPT 1995

<u>Test No.</u>	<u>SOIL SAMPLE</u>	<u>Test Results mg/Kg, mg/L (ppm)</u>
09-13-95-02	H-2	< 10 mg/Kg Gasoline < 10 mg/Kg Diesel < 10 mg/Kg TPH

Date Analyzed:  
13 SEPT 1995

<u>Test No.</u>	<u>SOIL SAMPLE</u>	<u>Test Results mg/Kg, mg/L (ppm)</u>
09-13-95-03	H-3	< 10 mg/Kg Gasoline < 10 mg/Kg Diesel < 10 mg/Kg TPH

Date Analyzed:  
13 SEPT 1995

<u>Test No.</u>	<u>SOIL SAMPLE</u>	<u>Test Results mg/Kg, mg/L (ppm)</u>
09-13-95-04	H-4	< 10 mg/Kg Gasoline < 10 mg/Kg Diesel < 10 mg/Kg TPH

Date Analyzed:  
13 SEPT 1995

<u>Test No.</u>	<u>SOIL SAMPLE</u>	<u>Test Results mg/Kg, mg/L (ppm)</u>
09-13-95-05	H-5	< 10 mg/Kg Gasoline < 10 mg/Kg Diesel < 10 mg/Kg TPH

Date Analyzed:  
13 SEPT 1995

September 14, 1995

Hecla Mining Co-Apex  
Attention: Ms. Penny Bassett

Subject: TPH Testing - Proj. - Apex

Sample Collected: 12 Sept 1995

Sample Received: 13 Sept 1995

---

Test No.                      SOIL SAMPLE  
09-13-95-06                  H-6

Date Analyzed:  
13 SEPT 1995

Test Results mg/Kg, mg/L (ppm)

< 10 mg/Kg Gasoline  
< 10 mg/Kg Diesel  
< 10 mg/Kg TPH

Test No.                      SOIL SAMPLE  
09-13-95-07                  H-7

Date Analyzed:  
13 SEPT 1995

Test Results mg/Kg, mg/L (ppm)

< 10 mg/Kg Gasoline  
< 10 mg/Kg Diesel  
< 10 mg/Kg TPH

Test No.                      SOIL SAMPLE  
09-13-95-08                  H-8

Date Analyzed:  
14 SEPT 1995

Test Results mg/Kg, mg/L (ppm)

< 10 mg/Kg Gasoline  
< 10 mg/Kg Diesel  
< 10 mg/Kg TPH

Test No.                      SOIL SAMPLE  
09-13-95-09                  H-9

Date Analyzed:  
14 SEPT 1995

Test Results mg/Kg, mg/L (ppm)

< 10 mg/Kg Gasoline  
< 10 mg/Kg Diesel  
< 10 mg/Kg TPH

Test No.                      SOIL SAMPLE  
09-13-95-10                  H-10

Date Analyzed:  
14 SEPT 1995

Test Results mg/Kg, mg/L (ppm)

< 10 mg/Kg Gasoline  
< 10 mg/Kg Diesel  
< 10 mg/Kg TPH

UTILITY TESTING LABORATORY

*D. M. Thorsen*  
PS

D. M. Thorsen

# UTILITY TESTING LABORATORY

875 SO. CHESTNUT ST.  
P. O. BOX 25005  
SALT LAKE CITY, UTAH 84125  
PHONE: (801) 973-8305  
FAX: (801) 973-8333

September 15, 1995

Hecla Mining Co-Apex  
P.O. Box 2407  
St. George, UT 84770

Attention: Penny Bassett

Subject: TPH Testing - Apex -AX12526-02

Sample Collected: 13 SEPT 95

Sample Received: 14 SEPT 95

**TOTAL PETROLEUM HYDROCARBONS (TPH) - GASOLINE & DIESEL  
(MODIFIED CALIFORNIA METHOD 8015)  
METHOD DETECTION LIMITS: 10 ppm SOIL, .5 ppm WATER**

<u>Test No.</u> 9-14-95-03	<u>SOIL SAMPLE</u> H-11	<u>Test Results mg/Kg, mg/L (ppm)</u> < 10 mg/Kg Gasoline < 10 mg/Kg Diesel < 10 mg/Kg TPH
Date Analyzed: 14 SEPT 95		
<u>Test No.</u> 9-14-95-04	<u>SOIL SAMPLE</u> H-12	<u>Test Results mg/Kg, mg/L (ppm)</u> < 10 mg/Kg Gasoline < 10 mg/Kg Diesel < 10 mg/Kg TPH
Date Analyzed: 15 SEPT 95		
<u>Test No.</u> 9-14-95-05	<u>SOIL SAMPLE</u> H-13	<u>Test Results mg/Kg, mg/L (ppm)</u> < 10 mg/Kg Gasoline < 10 mg/Kg Diesel < 10 mg/Kg TPH
Date Analyzed: 15 SEPT 95		
<u>Test No.</u> 9-14-95-09	<u>SOIL SAMPLE</u> H-17	<u>Test Results mg/Kg, mg/L (ppm)</u> < 10 mg/Kg Gasoline < 10 mg/Kg Diesel < 10 mg/Kg TPH
Date Analyzed: 15 SEPT 95		

September 15, 1995

Hecla Mining Co-Apex  
P.O. Box 2407  
St. George, UT 84770

Attention: Penny Bassett

Subject: TPH Testing - Apex -AX12526-02  
Sample Collected: 13 SEPT 95  
Sample Received: 14 SEPT 95

Test No.  
9-14-95-10

SOIL SAMPLE  
H-18

Date Analyzed:  
15 SEPT 95

Test Results mg/Kg, mg/L (ppm)  
< 10 mg/Kg Gasoline  
< 10 mg/Kg Diesel  
< 10 mg/Kg TPH

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875 SO. CHESTNUT ST.  
P. O. BOX 25005  
SALT LAKE CITY, UTAH 84125  
PHONE: (801) 973-8305  
FAX: (801) 973-8333

September 15, 1995

Hecla Mining Co-Apex  
P.O. Box 2407  
St. George, UT 84770

Attention: Penny Bassett

Subject: TRH Testing - Apex -AX12526-02

Sample Collected: 13 SEP 95

Sample Received: 14 SEP 95

TOTAL RECOVERABLE HYDROCARBONS (TRH)  
(EPA METHOD 418.1)  
METHOD DETECTION LIMITS: 10 ppm SOIL, .5 ppm WATER

Test No.  
9-14-95-06

SOIL SAMPLE  
H-14

Test Results mg/Kg, mg/L (ppm)  
< 10 PPM

Date Analyzed:  
14 SEP 95

Test No.  
9-14-95-07

SOIL SAMPLE  
H-15

Test Results mg/Kg, mg/L (ppm)  
166 PPM

Date Analyzed:  
14 SEP 95

Test No.  
9-14-95-08

SOIL SAMPLE  
H-16

Test Results mg/Kg, mg/L (ppm)  
22.9 PPM

Date Analyzed:  
14 SEP 95

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875 SO. CHESTNUT ST.  
P. O. BOX 25005  
SALT LAKE CITY, UTAH 84125  
PHONE: (801) 973-8305  
FAX: (801) 973-8333

September 21, 1995

Hecla Mining Co-Apex  
P.O. Box 2407  
St. George, UT 84770

Attention: Ms. Penny Bassett

Subject: Total Recoverable Hydrocarbons - Apex

Sample Collected: 19 Sept 1995

Sample Received: 20 Sept 1995

**TOTAL RECOVERABLE HYDROCARBONS**  
**METHOD 418.1 (MODIFIED) (SOIL), METHOD 418.1 (WATER)**  
**METHOD DETECTION LIMITS: 10 ppm SOIL, 5 ppm WATER**

<u>Test No.</u>	<u>SOIL SAMPLE</u>	<u>Test Results mg/Kg, mg/L (ppm)</u>
9-20-95-01	H-19	< 10 mg/Kg Oil and Grease

Date Analyzed:  
20 SEPT 1995

<u>Test No.</u>	<u>SOIL SAMPLE</u>	<u>Test Results mg/Kg, mg/L (ppm)</u>
9-20-95-02	H-20	< 10 mg/Kg Oil and Grease

Date Analyzed:  
20 SEPT 1995

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